What is Claimed:

1. A bonding tool for bonding a wire to a substrate, the bonding tool having a body and a working tip coupled to one end of the body, and comprising:

an orifice extending along a longitudinal axis of the body and the working tip; and

a coating disposed over at least a portion of a surface of the orifice.

2. A capillary bonding tool according to claim 1, wherein the coating extends along an entire length of the orifice.

3. A capillary bonding tool according to claim 2, wherein the coating is applied to at least a portion of an exterior surface of the working tip.

4. A capillary bonding tool according to claim 1, wherein the coating is disposed over at least a portion of an exterior surface of the working tip.

5. A capillary bonding tool according to claim 1, wherein the coating is disposed over an exterior surface of the working tip and the body.

6. A capillary bonding tool according to claim 1, wherein the coating is a polymer.

7. A capillary bonding tool according to claim 1, wherein the coating is at least one of i) a polymer, ii) an Alumina, iii) Si_3N_4 iv) silica v) a combination of 12% silica and 88% Alumina, and vi) Diamond like Silica (DLC).

8. A capillary bonding tool according to claim 1, wherein the coating is a polymer disposed along an interior surface of the orifice and one of i) an Alumina, ii) Si_3N_4, iii) silica, iv) a combination of12% silica and 88% Alumina, and v) Diamond like Silica (DLC) disposed along an exterior portion of the orifice.

9. A capillary bonding tool according to claim 1, wherein the coating has a substantially uniform thickness.

10. A capillary bonding tool according to claim 1, wherein the coating has a substantially uniform thickness of up to about 2.0 microns.

11. A capillary bonding tool according to claim 1, wherein the coating has a substantially uniform thickness of about 0.1 microns.

12. A capillary bonding tool according to claim 1, wherein the body of the bonding tool has a substantially cylindrical shape.

13. A capillary bonding tool according to claim 1, wherein the coating is one of polyolefine and parylene.

14. A capillary bonding tool according to claim 1, wherein the coating is formed by vapor phase deposition.

15. A capillary bonding tool according to claim 1, wherein the coating is formed by one of chemical vapor deposition and physical vapor deposition.

16. A capillary bonding tool according to claim 1, wherein the coating is formed by immersing the bonding tool in a coating material.

17. A method of manufacturing a capillary bonding tool for bonding a fine wire to a substrate, the method comprising the steps of:

forming a cylindrical body;

forming a taper at a first end of the body;

forming an orifice extending along a longitudinal axis of the body; and

coating at least a portion of the orifice with a polymer.

18. The method according to claim 17, wherein the coating step forms a substantially uniform continuous coating having a thickness of up to about 2.0 microns.

19. The method according to claim 17, wherein the coating step forms a substantially uniform continuous coating having a thickness of at least about 0.1 micron.

20. The method according to claim 17, wherein the coating step comprises the steps of:

forming a precursor monomer at a first temperature and a first pressure; and

forming the coating from the precursor monomer at a second temperature and pressure.

21. The method according to claim 20, wherein

the first temperature is about 690°C,

the first pressure is about 0.5 torr,

the second temperature is about 25°C, and

the second pressure is about 0.1 torr.

22. The method according to claim 20, wherein the precursor monomer is formed from a di-Para-Xylyene dimer vaporized at about 150°C and about 1.0 torr followed by a pyrolesis at about 690°C and about 0.5 torr.

23. The method according to claim 17, wherein the capillary is formed by i) one of direct ceramic dye pressing and ii) injection molding, and machined to a final shape by one of i) grinding and ii) Electro discharge machining.

24. A bonding tool for bonding a wire to a substrate, comprising:

a body portion;

a working tip coupled to one end of the body;

an orifice extending along a longitudinal axis of the body and the working tip;

a first coating disposed over at least a portion of a surface of the orifice; and

a second coating disposed over at least a portion of an exterior surface of the body.

25. A capillary bonding tool according to claim 24, wherein the first coating is a polymer and the second coating is other than a polymer.

26. A capillary bonding tool according to claim 25, wherein the second coating is one of an alumina and Si_3N_4.

27. A method of manufacturing a capillary bonding tool for bonding a fine wire to a substrate, the method comprising the steps of:

forming an orifice extending along a longitudinal axis of the bonding tool;

coating at least a portion of the orifice with a polymer; and

coating at least a portion of an exterior surface of the bonding tool with a non-polymer coating.